

REMARKS/ARGUMENTS

In response to the final Office Action mailed February 1, 2005, applicant respectfully requests reconsideration. In the Office Action, claims 1-10, 16 and 17 were rejected. Accordingly, claims 1-10, 16 and 17 are currently pending in this application.

Claim Rejection Under 35 U.S.C. §102

The rejection of claims 1-10, 16 and 17 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,417,463 to Cornelius et al. ("Cornelius") has been maintained by the examiner. This rejection is respectfully traversed, as Cornelius does not teach every element of the claims, as is required for a proper rejection under 35 U.S.C. §102(b).

The examiner states that Cornelius teaches a method including "connecting each of at least one ground via proximate the void to one of the at least one ground vias proximate the void with a capacitor 124/126/129 proximate the second surface of the substrate."

However, Cornelius does not teach connecting vias to each other with capacitors. As described in Column 5, lines 48-52, referring to Fig. 5, Cornelius states, "...overall system inductance has been reduced by connecting a first set of capacitors 124 and a second set of capacitors 126 to vias 102 and balls 100. In Fig. 5, capacitors 124 and 126 look like two squares spaced apart. The connections linking capacitors 124 and 126 with vias 102 appear in Fig. 5 as horizontal rectangles...."

Clearly, as shown in Fig. 5, capacitors 124 and 126 connect balls 100 to each other. The capacitors are connected to vias, as shown by the horizontal rectangles, but one via is not connected to another via by a filter device, as recited in independent claims 1 and 6.

Furthermore, Cornelius' capacitors are not connected between vias (or balls, for that matter) proximate a void between the vias. Although Cornelius mentions removing vias in Column 4, as pointed out by the examiner, he removes the vias from an existing BGA only to position more vias in the open spaces 108 to increase the density of vias compared to the existing BGA. See Column 4, lines 11-14 and 22-24.

Therefore, Cornelius does not teach removing at least one of the vias to form a void between at least one ground via and at least one power via; and Cornelius does not teach connecting each of the at least one ground via proximate the void to one of the at least one power vias proximate the void with a filter device proximate the second surface of the substrate, as recited in independent claims 1 and 6.

Accordingly, since Cornelius does not teach every element recited in independent claims 1 and 6, the rejection of independent claims 1 and 6 under 35 U.S.C. §102(b) is improper and should be withdrawn.

Claims 2-5 and 16 depend from independent claim 1 and are allowable for at least the same reasons as independent claim 1.

Claims 7-10 and 17 depend from independent claim 6 and are allowable for at least the same reasons as independent claim 6.

Based on the foregoing amendments and remarks, applicant asserts that pending claims 1-10, 16 and 17 are allowable over the prior art of record and respectfully requests that a timely Notice of Allowance be issued in this application.

In the event the Examiner deems personal contact desirable in the disposition of this case, the Examiner is invited to call the undersigned attorney at 508.293.7835.

Please charge all fees occasioned by this submission to Deposit Account No. 05-0889.

Respectfully submitted,

5/1/06

Date

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